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09/822,037	03/29/2001	Guangxin Wang	H0001831 (4016)	8388

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EXAMINER
WILKINS III, HARRY D

ART UNIT	PAPER NUMBER
1742	12

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/822,037	Applicant(s) WANG, GUANGXIN	
	Examiner Harry D Wilkins, III	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence addr ss --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *33-37,44-48,50,53-69 and 73* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *33-37,44-48,50,54-63 and 73* is/are allowed.

6)☒ Claim(s) *53,64 and 66-69* is/are rejected.

7)☒ Claim(s) *65* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *11* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 14 April 2003 has been entered.

Allowable Subject Matter

2. The indicated allowability of claims 53, 64 and 66-69 is withdrawn in view of the newly discovered reference(s) to Hartig et al (US 5,403,458) and copending US Application No. 09/695,814. Rejections based on the newly cited reference(s) follow.

3. Claims 33-37, 44-48, 50, 54-58, 59-63 and 73 are allowed.

4. Claim 65 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: the claims are allowable for at least the reasons as stated in paper no. 8. In addition, none of the references cited on the PTO-1449 filed 14 April 2003 teach the invention as claimed. Harvey et al (US 3,979,275 and 4,033,839) teach a method of electrodepositing high quality metals, such as copper, and is not related to either a Ti-Ta alloy or a PVD target.

Hara et al (US 6,309,529) teach a method of making sputtering targets of precious metals by electrodepositing, but does not suggest any of the combinations of alloys now claimed. Ginatta (US 4,400,247), while teaching electrolytic forming of metals, does not suggest combining the metals listed in claim 20 to achieve alloys, such as those presently claimed. (Compare with claim 21, where ferroalloys are described to show the intention that alloys/combinations were not within the scope of claim 20.) Thus, the present claims are allowable over the references cited in the PTO-1449 filed on 14 April 2003.

In addition, claims 33-37 are allowable over Hartig et al because a Ta-Ti mixture is not contemplated by Hartig et al. Claims 44-48 require Ta, and Hartig et al do not contemplate targets made from Ta. Claim 50 is allowable over Hartig et al because (see col. 7, lines 28-41) Ti is used as the dopant only when the majority element of the target is Si and would not be combined with a Ni or V dopant. Claims 54-58 are not taught by Hartig et al because (see col. 7, lines 28-41) Hf is used as the dopant only when the majority element of the target is Si and would not be combined with a Ni or V dopant. Claims 59-63 require Nb, and Hartig et al do not contemplate targets made from Nb. Claim 65 requires Zr to be present at 5-25 wt%. Zr is used as the dopant only when the majority element of the target is Si and would not be combined with a Ni or V dopant, thus, Hartig et al does not contemplate a material with 5-25 wt% Zr combined with one of Ni or V. Claim 73 is allowable over Hartig et al because (see col. 7, lines 28-41) Hf is used as the dopant only when the majority element of the target is Si and would not be combined with a Ni or V dopant. Claim 65 is not taught in 09/695,814

because claim 85 of '814 requires that the majority of the composition be Zr (i.e.- at least 50%), whereas, claim 65 only requires 5-25 wt% Zr.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 64 and 66-69 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 85-103 of copending Application No. 09/695,814. Although the conflicting claims are not identical, they are not patentably distinct from each other because the presently claimed material, which consists essentially of a first element, including Zr, and a second element including V, is taught by claim 85 of the copending application. The composition of the target includes from 50-100% Zr with 0-50% of V. Thus, '814

teaches an overlapping range of composition of the material of present claims 64 and 66-69. See MPEP 2144.05. It would have been obvious to select V as the added element in the sputtering target of '814.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 64 and 66-69 are provisionally rejected under 35 U.S.C. 102(e) as being anticipated by copending Application No. 09/695,814 which has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e), if published under 35 U.S.C. 122(b) or patented. This provisional rejection under 35 U.S.C. 102(e) is based upon a presumption of future publication or patenting of the copending application. The '814 application discloses a mixed metal material that is mostly Zr (i.e.- at least 50 wt%) and is mixed with an element from a list, of which Ni and V are two. Thus, '814 teaches a material with 50-100 wt% Zr and 0-50 wt% Ni or V. This composition overlaps the presently claimed range. See MPEP 2131.03.

This provisional rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131. This rejection may not be overcome by the filing of a terminal disclaimer. See *In re Bartfeld*, 925 F.2d 1450, 17 USPQ2d 1885 (Fed. Cir. 1991).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 53, 64, 67, 68 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartig et al (US 5,403,458).

Hartig et al teach (see col. 6, lines 11-14, lines 37-44, col. 7, lines 5-19 and col. 8, lines 1-11) a sputtering target that comprises as the major element, Ti or Zr, with a dopant that can be added at 0.1-50 wt% and can be Ni.

Thus, regarding claim 53, Hartig et al teach a material with 50-99.9 wt% Ti and 0.1-50 wt% Ni. See MPEP 2144.05. It would have been within the scope of Hartig et al's invention to have selected Ti as the coating component and Ni as the dopant.

Regarding claims 64, 67 and 68, Hartig et al teach a material with 50-99.9 wt% Zr and 0.1-50 wt% Ni. See MPEP 2144.05. It would have been within the scope of

Hartig et al's invention to have selected Zr as the coating component and Ni as the dopant.

Regarding claim 69, Hartig et al teach a PVD target which contains as the first element, either Zr or Ti and as the second element Ni. It would have been within the scope of Hartig et al's invention to have selected Zr or Ti as the coating component and Ni as the dopant.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D Wilkins, III whose telephone number is 703-305-9927. The examiner can normally be reached on M-Th 6:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Harry D Wilkins, III
Examiner
Art Unit 1742

hdw
May 7, 2003

ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700